Professor George F. Smoot
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Education

Ph.D. Massachusetts Institute of Technology, Physics, 1970.
Thesis: "Charge Exchange of K^+ on Platinum at Three GeV."

B.S. Massachusetts Institute of Technology, Mathematics and Physics, 1966.
Thesis: "Measurement of $\eta \rightarrow 3\pi^o$."

Professional Experience

1994– Professor, Physics Department, University of California, Berkeley
1971– Research Physicist, University of California, Berkeley, Space Sciences Laboratory
1974– Joint appointment, Research Physicist, Lawrence Berkeley National Laboratory.
Primary research:
(1) Observational cosmology and particle physics utilizing the cosmic background radiation as a probe of the early universe. These include, work on COBE and Planck satellites, and airborne and ground-based experiments to extend anisotropy and spectrum measurements to greater accuracy. Also, work on the SNAP mission to utilize supernovae and gravitational lensing as cosmological probes.
(2) Cosmic radiation measurement utilizing balloon-borne superconducting magnetic spectrometers. Work on HEAO satellite cosmic ray experiment, including design and testing on one-year lifetime liquid helium cryostat containing a superconducting magnet. Design tests of total absorption shower counter and calorimeter at Bevatron, NAL, and SLAC. Work on Astronomy, a superconducting magnetic spectrometer for the Space Station. High-energy neutrino astronomy including work on AMANDA and IceCube projects.
1968–72 Co-Experimenter on experiment to test the $\Delta S=\Delta Q$ rule for weak interactions by measuring $K^o \rightarrow \pi$ ev decays to observe the proper time evolution of K_{e3} decays in the first few K_S lifetimes.
1974– 75 Member of APS Committee on the Safety of Commercial Nuclear Reactors.
1976–80 Member of Management and Operations Working Group for Shuttle Astronomy.
1975–97 Member of Steering Group on Cosmic Background Explorer satellite and Principal Investigator on isotropy experiment (NASA).
1982–90 Member of White Mountain Research Station Advisory Committee.
1985– 96 Superconducting Magnet Facility, Space Station Study Team as Magnet Scientist.
1988–00 Member of The Center for Particle Astrophysics at UC Berkeley
1990–98 Member of Radio Astronomy Laboratory Advisory Committee
1993- Member of Planck Mission Team.
1996-00 Member of AMANDA Collaboration and IceCube Design Team.
1996 LBNL Nuclear Science Division Search Committee
1996- The Advisory Committee for the Space Sciences Laboratory
1997 Director Search Committee Chair, Space Science Laboratory
2000- Member of SNAP Mission Team.

Memberships, Awards and Honors:

Sigma Xi, American Physical Society, American Astronomical Society
American Association for Advancement of Science, International Astronomical Union
NASA Medal for Exceptional Scientific Achievement (May 1991)
Popular Science Award (Nov 1992)
Aerospace Laureate, Aviation Week & Space Technology (Apr 1993)
1993 Distinguished Scientist, ARCS Foundation, Inc. (Apr 1993)
Kilby Award (May 1993)
Gravity Research Foundation Essay First Award (May 1993)

Productivity Group Award, Goddard Space Flight Center, NASA (May 1993)
American Achievement Golden Plate Award, (June 1994)
Lawrence Award, (March 1995)
Medal: Francois Fonde Le College De France (2002-2003)
Gruber Prize with John Mather (2006)
Nobel Prize in Physics, with John Mather. (2006)
Daniel Chalonge Medal, from the International School of Astrophysics (2006)

Books and Other Selected Publications:

1. *Wrinkles in Time*, G.F. Smoot and K. Davidson, Little Brown, London (1993); Wm. Morrow, New York, (1994).

2. "Report to the American Physical Society by the Study Group on Light-Water Reactor Safety," H.W. Lewis, et al., *Reviews of Modern Physics* **47** (1975)

3. "Detection of Anisotropy in the Cosmic Blackbody Radiation," G.F. Smoot et al., *Phys. Rev. Lett.* **39**, 898 (1977)

4. "Search for Linear Polarization of the Cosmic Background Radiation," P.M. Lubin, and G.F. Smoot, *Phys. Rev. Lett.* **42**, 129 (1979).

5. "Structure in the *COBE* Differential Microwave Radiometer First Year Maps," G.F. Smoot et al., *Astrophysical Journal* **396**, L1 (1992)

6. "Cosmic Microwave Background Probes Models of Inflation," R. Davis et al., astro-ph/9207001, *Phys. Rev. Lett.,* **69**, 13 (1992)

7. "Measurement of the Cosmic Microwave Background Spectrum by the COBE FIRAS Instrument," J.C. Mather, et al., *The Astrophysical Journal* **420**, 439 (1994)

8. "A Degree Scale Anisotropy Measurement of the Cosmic Microwave Background Near the Star Gamma Ursae Minoris," J. Gundersen, et al., *Astrophysical Journal,* **413**, L1 (1993)

9. "Statistics and Topology of the *COBE* DMR First Year Sky Maps," G.F. Smoot et al., astro-ph/9312031, *The Astrophysical Journal*, **437**, 1 (1994)

10. "Gravity's Rainbow," G.F. Smoot and P.J. Steinhardt, astro-ph/9212003, *Journal of Quantum and Classical Gravity* **10**, S19 (1993)

11. "The Cosmic Background Radiation Anisotropy Satellite," M. Bersanelli, N. Mandolesi, G.F. Smoot, *Mem S.A.It.*, **66**, (1995)

12. "Constraints on the Topology of the Universe from the 2-year COBE Data," A. Costa and G.F. Smoot, astro-ph/9412003, *The Astrophysical Journal,* **448**, 477 (1995)

13. "The Millimeter Wave Anisotropy Experiment (MAX)," S. Tanaka, et al., *Astro. Lett. and Comm.,* **32**, 223 (1995)

14. "Measurements of Anisotropy in the CMB Radiation at 0°.5 Scales near the Stars HR5127 and Phi Herculis," S.T. Tanaka et al., *The Astrophysical Journal Lett.* **468**, L81 (1996)

15. "Power Spectrum of Primordial Inhomogeneity Determined from the Four-Year COBE DMR Sky Maps," K.M. Gorski et al., *The Astrophysical Journal Lett.* **464**, L11 (1996)

16. "Cosmology from MAXIMA-1, BOOMERANG, and COBE DMR cosmic microwave background observations," A.H. Jaffe, et al., astro–ph/0007333, *Phys. Rev. Lett.* **86**, 3475 (2001).

17. “Extracting cosmic microwave background polarization from satellite astrophysical maps,” C. Baccigalupi, et al., astro-ph/0209591, submitted to *MNRAS* (2002)

18. “The large-scale polarization of the microwave background and foreground,” Angelica de Oliveira-Costa et al., astro-ph/0212419, *The Astrophysical Journal*, submitted (2002)

19. “Determining Foreground Contamination in CMB Observations: Diffuse Galactic Emission in the MAXIMA-I Field,” A. H. Jaffe, et al., astro-ph/0301077, *The Astrophysical Journal*, submitted (Jan. 2003)

20. “My Einstein Suspenders,” in *My Einstein: Essays by Twenty-four of the World's Leading Thinkers on the Man, His Work, and His Legacy*. John Brockman, ed. Pantheon, 2006.